

# Petroleum Refineries: 2002

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## 2002 Economic Census

*Manufacturing*

Industry Series



U S C E N S U S B U R E A U

*Helping You Make Informed Decisions*

U.S. Department of Commerce  
Economics and Statistics Administration  
U.S. CENSUS BUREAU



**Table 1. Historical Statistics for the Industry: 2002 and Earlier Years**

[Data based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). For information on confidentiality protection, sampling error, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Industry and year <sup>1</sup>	Com- panies <sup>2</sup>	All estab- lish- ments <sup>3</sup>	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expendi- tures (\$1,000)	
			Number <sup>4</sup>	Payroll (\$1,000)	Number <sup>4</sup>	Hours (1,000)	Wages (\$1,000)					
324110, Petroleum refineries .....	2002..	84	199	62 540	4 395 947	38 526	84 270	2 648 000	27 955 185	168 047 624	194 761 863	7 522 218
	2001..	N	N	63 258	4 233 075	40 687	93 533	2 561 238	40 324 037	158 733 328	199 909 550	6 817 156
	2000..	N	N	62 118	3 991 697	39 777	92 334	2 461 513	36 634 094	180 567 975	215 564 518	4 684 712
	1999..	N	N	63 619	3 983 102	40 843	94 107	2 440 889	31 516 328	114 130 802	144 291 778	3 943 051
	1998..	N	N	64 920	3 964 664	42 231	97 788	2 461 449	24 023 637	92 211 962	118 155 923	4 168 878
	1997..	122	242	65 448	3 884 869	42 693	99 837	2 412 190	30 878 456	127 555 077	158 667 598	4 244 371

<sup>1</sup>Statistics presented for years ending in 2 and 7 are census data. Interim census years are derived in a representative sample of manufacturing establishments canvassed in the Annual Survey of Manufactures (ASM).

<sup>2</sup>For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

<sup>3</sup>Includes establishments with payroll at any time during the year.

<sup>4</sup>Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain sampling errors and nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 2. Industry Statistics for Selected States: 2002**

[States that are a disclosure or with less than 100 employees are not shown. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, explanation of terms, and geographical definitions, see note at end of table. For information on geographic areas followed by \*, see Appendix D. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E <sup>1</sup>	All establishments <sup>2</sup>		All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number <sup>3</sup>	Payroll (\$1,000)	Number <sup>3</sup>	Hours (1,000)	Wages (\$1,000)				
<b>324110, Petroleum refineries</b>												
United States .....	—	199	175	62 540	4 395 947	38 526	84 270	2 648 000	27 955 185	168 047 624	194 761 863	7 522 218
Alabama .....	—	4	4	424	28 170	270	539	16 536	143 890	1 245 106	1 383 561	20 268
California .....	—	25	24	8 561	625 567	5 202	11 777	372 318	4 503 410	17 325 679	22 004 975	3 020 971
Illinois .....	—	10	8	2 896	206 681	1 802	3 999	127 572	1 139 773	9 268 202	10 511 154	592 015
Kansas .....	—	4	3	1 260	73 935	747	1 470	45 416	233 357	2 887 150	3 131 435	25 969
Louisiana .....	—	21	21	8 326	604 340	4 828	10 872	341 199	4 566 358	27 779 549	32 017 153	688 175
Montana .....	—	4	4	857	52 453	604	1 219	35 371	243 859	1 547 152	1 798 305	38 245
New Jersey .....	—	8	5	2 176	159 320	1 362	3 159	99 212	1 123 501	6 327 556	7 389 351	239 524
Ohio .....	—	7	4	1 707	121 582	973	2 290	70 419	868 547	6 089 232	6 800 322	79 738
Oklahoma .....	1	6	5	1 680	103 252	1 102	2 331	60 939	230 069	4 753 747	4 943 120	127 256
Pennsylvania .....	—	9	8	3 482	229 429	2 041	4 469	137 644	1 558 499	8 887 479	10 360 921	47 390
Texas .....	—	36	34	16 912	1 239 043	10 749	24 267	748 691	7 618 815	48 504 583	55 558 909	1 433 981
Utah .....	—	5	4	705	47 849	466	1 022	30 836	175 996	1 579 667	1 745 287	43 034
Washington .....	—	6	6	2 711	200 466	1 650	2 645	119 374	1 578 745	5 056 589	6 598 320	239 603
Wyoming .....	—	5	5	713	42 153	501	1 092	27 768	171 677	1 504 940	1 652 614	30 656

<sup>1</sup>Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

<sup>2</sup>Includes establishments with payroll at any time during the year.

<sup>3</sup>Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C. For geographical definitions, see Appendix D.

**Table 3. Detailed Statistics by Industry: 2002**

[Data based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). For information on confidentiality protection, sampling error, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Item	Value
<b>324110, Petroleum refineries</b>	
Companies <sup>1</sup> .....	number.. 84
All establishments <sup>2</sup> .....	number.. 199
Establishments with 1 to 19 employees .....	number.. 24
Establishments with 20 to 99 employees .....	number.. 51
Establishments with 100 employees or more .....	number.. 124
All employees <sup>3</sup> .....	number.. 62 540
Total compensation .....	\$1,000.. 5 850 207
Annual payroll .....	\$1,000.. 4 395 947
Total fringe benefits .....	\$1,000.. 1 454 260
Production workers, average for year .....	number.. 38 526
Production workers on March 12 .....	number.. 37 956
Production workers on May 12 .....	number.. 39 081
Production workers on August 12 .....	number.. 38 776
Production workers on November 12 .....	number.. 38 259
Production worker hours .....	1,000.. 84 270
Production worker wages .....	\$1,000.. 2 648 000
Total cost of materials .....	\$1,000.. 168 047 624
Materials, parts, containers, packaging, etc., used .....	\$1,000.. 157 415 200
Resales .....	\$1,000.. 4 075 636
Purchased fuels .....	\$1,000.. 4 318 634
Purchased electricity .....	\$1,000.. 1 486 965
Contract work .....	\$1,000.. 751 189
Quantity of electricity purchased for heat and power .....	1,000 kWh.. 35 807 724
Quantity of electricity generated less sold for heat and power .....	1,000 kWh.. 11 894 656
Total value of shipments .....	\$1,000.. 194 761 863
Primary products value of shipments .....	\$1,000.. 187 405 681
Secondary products value of shipments .....	\$1,000.. 3 047 338
Total miscellaneous receipts .....	\$1,000.. 4 308 844
Value of resales .....	\$1,000.. 4 165 993
Contract receipts .....	\$1,000.. 68 155
Other miscellaneous receipts .....	\$1,000.. 74 696
Primary products specialization ratio .....	percent.. 98
Value of primary products shipments made in all industries .....	\$1,000.. 187 903 659
Value of primary products shipments made in this industry .....	\$1,000.. 187 405 681
Value of primary products shipments made in other industries .....	\$1,000.. 497 978
Coverage ratio .....	percent.. 100
Value added .....	\$1,000.. 27 955 185
Total inventories, beginning of year .....	\$1,000.. 11 093 736
Finished goods inventories .....	\$1,000.. 5 143 357
Work-in-process inventories .....	\$1,000.. 3 052 712
Materials and supplies inventories .....	\$1,000.. 2 897 667
Total inventories, end of year .....	\$1,000.. 12 713 561
Finished goods inventories .....	\$1,000.. 6 029 438
Work-in-process inventories .....	\$1,000.. 3 407 577
Materials and supplies inventories .....	\$1,000.. 3 276 546
Gross value of depreciable assets (acquisition costs) at beginning of year .....	\$1,000.. 78 229 519
Total capital expenditures (new and used) .....	\$1,000.. 7 522 218
Buildings and other structures (new and used) .....	\$1,000.. 3 335 013
Machinery and equipment (new and used) .....	\$1,000.. 4 187 205
Automobiles, trucks, etc., for highway use .....	\$1,000.. 34 283
Computers and peripheral data processing equipment .....	\$1,000.. 199 177
All other expenditures for machinery and equipment .....	\$1,000.. 3 953 745
Total retirements .....	\$1,000.. 1 290 615
Gross value of depreciable assets at end of year .....	\$1,000.. 84 461 122
Depreciation charges during year .....	\$1,000.. 3 758 478
Total rental payments .....	\$1,000.. 471 657
Buildings and other structures .....	\$1,000.. 109 018
Machinery and equipment .....	\$1,000.. 362 639
Total other expenses <sup>4</sup> .....	\$1,000.. 7 588 176
Response coverage ratio <sup>5</sup> .....	percent.. 92
Repair and maintenance services of buildings and/or machinery <sup>4</sup> .....	\$1,000.. 2 034 646
Communications services <sup>4</sup> .....	\$1,000.. 64 566
Legal services <sup>4</sup> .....	\$1,000.. 60 447
Accounting, auditing, and bookkeeping services <sup>4</sup> .....	\$1,000.. 57 495
Advertising and promotional services <sup>4</sup> .....	\$1,000.. 24 504
Expensed computer hardware and supplies and purchased computer services <sup>4</sup> .....	\$1,000.. 129 699
Refuse removal (including hazardous waste) services <sup>4</sup> .....	\$1,000.. 203 522
Management consulting and administrative services <sup>4</sup> .....	\$1,000.. 287 685
Taxes and license fees <sup>4</sup> .....	\$1,000.. 503 312
All other expenses <sup>4</sup> .....	\$1,000.. 4 222 300

<sup>1</sup>For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

<sup>2</sup>Includes establishments with payroll at any time during the year.

<sup>3</sup>Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

<sup>4</sup>Based on Annual Survey of Manufactures (ASM) sample data.

<sup>5</sup>A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those Annual Survey of Manufactures (ASM) establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note 1: The amounts shown for other expenses reflect only those services that establishments purchase from other companies.

Note 2: The data in this table are based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain sampling errors and nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 4. Industry Statistics by Employment Size: 2002**

[Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Employment size class	E <sup>1</sup>	All establishments <sup>2</sup>	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number <sup>3</sup>	Payroll (\$1,000)	Number <sup>3</sup>	Hours (1,000)	Wages (\$1,000)				
324110, Petroleum refineries											
All establishments .....	—	199	62 540	4 395 947	38 526	84 270	2 648 000	27 955 185	168 047 624	194 761 863	7 522 218
Establishments with—											
1 to 4 employees .....	—	—	—	—	—	—	—	—	—	—	—
5 to 9 employees .....	—	3	21	968	12	25	541	6 406	41 585	48 104	1 801
10 to 19 employees .....	5	21	287	17 602	189	416	10 810	129 340	607 372	737 159	21 378
20 to 49 employees .....	1	31	1 005	57 728	633	1 352	33 212	386 098	1 668 344	2 050 716	42 783
50 to 99 employees .....	—	20	1 396	75 473	950	2 069	48 768	2 185 532	2 038 583	4 220 741	63 377
100 to 249 employees .....	—	42	7 441	484 430	4 890	10 399	311 110	2 801 618	17 164 897	19 770 054	339 638
250 to 499 employees .....	—	37	12 768	877 180	7 884	17 471	539 342	5 959 257	37 601 347	43 079 652	1 186 626
500 to 999 employees .....	—	31	22 276	1 598 689	13 409	30 736	966 882	6 986 546	63 811 587	70 817 131	4 569 912
1,000 to 2,499 employees .....	—	14	17 346	1 283 877	10 559	21 802	737 335	9 500 388	45 113 909	54 038 306	1 296 703
2,500 employees or more .....	—	—	—	—	—	—	—	—	—	—	—
Administrative records <sup>4</sup> .....	—	—	—	—	—	—	—	—	—	—	—

<sup>1</sup>Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

<sup>2</sup>Includes establishments with payroll at any time during the year.

<sup>3</sup>Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

<sup>4</sup>Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 5. Industry Statistics by Primary Product Class Specialization: 2002**

[Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Industry or product class code	Industry or primary product class	All establishments <sup>1</sup>	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number <sup>2</sup>	Payroll (\$1,000)	Number <sup>2</sup>	Hours (1,000)	Wages (\$1,000)				
324110	Petroleum refineries .....	199	62 540	4 395 947	38 526	84 270	2 648 000	27 955 185	168 047 624	194 761 863	7 522 218
324110I	Gasoline, including finished base stocks and blending agents .....	119	55 804	3 984 035	34 339	75 182	2 397 088	24 350 916	156 522 958	179 672 927	7 217 927
3241104	Jet fuel .....	5	886	65 781	645	1 466	49 100	582 941	2 492 292	3 102 986	52 128
324110A	Light fuel oils .....	10	1 034	55 034	553	1 088	28 350	261 414	1 755 228	2 000 284	49 322
324110D	Heavy fuel oils, including grades No. 5, 6, heavy diesel-type, heavy gas-enrichment oils, etc. ....	1	c	D	D	D	D	D	D	D	D
324110G	Petroleum lubricating oils and greases, made in a refinery .....	9	e	D	D	D	D	D	D	D	D
324110J	Unfinished oils and lubricating oil base stock .....	19	1 656	95 607	1 047	2 259	57 017	385 379	2 443 913	2 814 945	46 609
324110M	Asphalt .....	17	643	37 310	437	973	24 271	266 609	1 294 626	1 548 214	30 028
324110T	Other finished petroleum products, including waxes, made in a refinery .....	9	1 731	113 105	1 038	2 374	69 178	1 967 324	2 683 706	4 645 215	98 951

<sup>1</sup>Includes establishments with payroll at any time during the year.

<sup>2</sup>Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 6a. **Products Statistics: 2002 and 1997**

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Product code	Product	Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)
324110	Petroleum refineries .....	2002.. N 1997.. N	X X	X X	187 903 659 152 755 956
3241101	Gasoline, including finished base stocks and blending agents .....	2002.. N 1997.. N	X X	X X	97 455 097 77 557 632
32411011	Gasoline, including finished base stocks and blending agents .....	2002.. N 1997.. N	X X	X X	97 455 097 76 888 379
3241101111	Aviation gasoline (excluding jet fuel), including finished base stocks and blending agents .....	mil bbl. 2002.. 25 1997.. 17	X X	S 21.6	3 751 214 1 013 731
3241101121	Motor gasoline, including finished base stocks and blending agents .....	mil bbl. 2002.. 51 1997.. 62	X X	P2 927.7 2 816.1	93 703 883 75 874 648
3241101Y	Gasoline, including finished base stocks and blending agents, nsk .....	2002.. N 1997.. N	X X	X X	— 669 253
3241101YV	Gasoline, including finished base stocks and blending agents, nsk .....	2002.. N 1997.. N	X X	X X	— 669 253
3241104	Jet fuel .....	2002.. N 1997.. N	X X	X X	17 374 167 14 017 775
32411041	Jet fuel .....	2002.. N 1997.. N	X X	X X	17 374 167 13 835 166
3241104111	Jet fuel, naphtha-type .....	mil bbl. 2002.. 14 1997.. 22	X X	977.6 S	2 327 771 2 641 296
3241104121	Jet fuel, kerosene-type .....	mil bbl. 2002.. 36 1997.. 47	X X	495.8 470.4	15 046 396 11 193 870
3241104Y	Jet fuel, nsk .....	2002.. N 1997.. N	X X	X X	— 182 609
3241104YV	Jet fuel, nsk .....	2002.. N 1997.. N	X X	X X	— 182 609
3241107	Kerosene, excluding jet fuel .....	2002.. N 1997.. N	X X	X X	749 518 960 019
32411071	Kerosene, excluding jet fuel .....	2002.. N 1997.. N	X X	X X	749 518 960 019
3241107100	Kerosene, excluding jet fuel .....	mil bbl. 2002.. 24 1997.. 26	X X	24.6 37.3	749 518 960 019
324110A	Light fuel oils .....	2002.. N 1997.. N	X X	X X	38 560 945 28 941 405
324110A1	Light fuel oils .....	2002.. N 1997.. N	X X	X X	38 553 029 28 643 819
324110A111	Distillate light fuel oil, including grades No. 1, 2, light diesel-type, light gas-enrichment oils, etc. ....	mil bbl. 2002.. 54 1997.. 70	X X	P1 272.8 1 142.9	37 183 368 27 377 088
324110A121	No. 4 type light fuel oil .....	mil bbl. 2002.. 13 1997.. 14	X X	S 59.5	1 369 661 1 266 731
324110AY	Light fuel oils, nsk .....	2002.. N 1997.. N	X X	X X	7 916 297 586
324110AYV	Light fuel oils, nsk .....	2002.. N 1997.. N	X X	X X	7 916 297 586
324110D	Heavy fuel oils, including grades No. 5, 6, heavy diesel-type, heavy gas-enrichment oils, etc. ....	2002.. N 1997.. N	X X	X X	6 132 764 4 295 288
324110D1	Heavy fuel oils, including grades No. 5, 6, heavy diesel-type, heavy gas-enrichment oils, etc. ....	2002.. N 1997.. N	X X	X X	6 132 764 4 295 288
324110D100	Heavy fuel oils, including grades No. 5, 6, heavy diesel-type, heavy gas-enrichment oils, etc. ....	mil bbl. 2002.. 40 1997.. 57	X X	284.4 262.6	6 132 764 4 295 288
324110G	Petroleum lubricating oils and greases, made in a refinery .....	2002.. N 1997.. N	X X	X X	1 157 968 704 035
324110G1	Petroleum lubricating oils and greases, made in a refinery .....	2002.. N 1997.. N	X X	X X	1 157 968 667 596
324110G111	Lubricating oils (including hydraulic fluids, quenching and cutting oils, transformer oils, liquid rust preventives, etc.), made in a refinery <sup>1</sup> .....	mil bbl. 2002.. 14 1997.. 16	X X	P20.7 P11.7	1 052 710 556 138
324110G121	Lubricating greases, made in a refinery <sup>2</sup> .....	mil bbl. 2002.. 6 1997.. 8	X X	S S	105 258 111 458
324110GY	Lubricating oils and greases, made in a refinery, nsk .....	2002.. N 1997.. N	X X	X X	— 36 439
324110GYV	Lubricating oils and greases, made in a refinery, nsk .....	2002.. N 1997.. N	X X	X X	— 36 439
324110J	Unfinished oils and lubricating oil base stock .....	2002.. N 1997.. N	X X	X X	8 465 540 8 219 990
324110J1	Unfinished oils and lubricating oil base stock .....	2002.. N 1997.. N	X X	X X	8 465 540 7 826 566
324110J111	Unfinished oils, naphthenic and paraffinic .....	mil bbl. 2002.. 34 1997.. 33	X X	117.7 129.5	2 952 035 3 298 305
324110J121	Naphtha and other unfinished oils for use as petrochemical feedstocks, excluding carbon black .....	mil bbl. 2002.. 25 1997.. 29	X X	P83.4 65.2	2 446 589 2 161 763
324110J131	Carbon black feedstock (unfinished oils) .....	mil bbl. 2002.. 17 1997.. 14	X X	P35.9 S	700 412 154 226
324110J141	Lubricating oil petroleum-base bright stock .....	mil bbl. 2002.. 7 1997.. 11	X X	2.4 9.3	128 525 358 447
324110J151	Lubricating oil petroleum-base neutral stock .....	mil bbl. 2002.. 13 1997.. 16	X X	S 32.1	1 539 984 1 212 715
324110J161	Lubricating oil petroleum-base red and pale oils .....	mil bbl. 2002.. 5 1997.. 10	X X	D P4.6	D 184 531
324110J171	Other lubricating oil petroleum-base stocks .....	mil bbl. 2002.. 14 1997.. 14	X X	D 15.7	D 456 579
324110JY	Unfinished oils and lubricating oil base stock, nsk .....	2002.. N 1997.. N	X X	X X	— 393 424
324110JYV	Unfinished oils and lubricating oil base stock, nsk .....	2002.. N 1997.. N	X X	X X	— 393 424

See footnotes at end of table.

Table 6a. **Products Statistics: 2002 and 1997—Con.**

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Product code	Product	Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)
324110	Petroleum refineries—Con.				
324110M	Asphalt .....	2002.. N	X	X	4 323 290
		1997.. N	X	X	3 320 500
324110M1	Asphalt .....	2002.. N	X	X	4 323 290
		1997.. N	X	X	2 954 739
324110M111	Paving grade asphalts .....	2002.. 41 mil bbl.	X	q141.4	3 340 593
		1997.. 51	X	P140.0	2 463 004
324110M121	Roofing grade asphalts .....	2002.. 21 mil bbl.	X	S	387 803
		1997.. 22	X	q10.5	222 233
324110M131	All other miscellaneous asphalts .....	2002.. 21 mil bbl.	X	S	594 894
		1997.. 20	X	15.0	269 502
324110MY	Asphalt, nsk .....	2002.. N	X	X	—
		1997.. N	X	X	365 761
324110MYWV	Asphalt, nsk .....	2002.. N	X	X	—
		1997.. N	X	X	365 761
324110P	Liquefied refinery gases (aliphatics), made in a refinery .....	2002.. N	X	X	6 689 403
		1997.. N	X	X	8 157 277
324110P1	Liquefied refinery gases (aliphatics), made in a refinery .....	2002.. N	X	X	6 689 403
		1997.. N	X	X	8 110 982
324110P111	Liquefied refinery gases (aliphatics), for use as a chemical raw material, made in a refinery <sup>3</sup> .....	2002.. 25	X	X	3 898 198
		1997.. 34	X	X	4 526 761
324110P121	Liquefied refinery gases (aliphatics), for other uses, made in a refinery <sup>4</sup> .....	2002.. 25	X	X	2 791 205
		1997.. 29	X	X	3 584 221
324110PY	Liquefied refinery gases (aliphatics), made in a refinery, nsk .....	2002.. N	X	X	—
		1997.. N	X	X	46 295
324110PYWV	Liquefied refinery gases (aliphatics), made in a refinery, nsk .....	2002.. N	X	X	—
		1997.. N	X	X	46 295
324110T	Other finished petroleum products, including waxes, made in a refinery .....	2002.. N	X	X	6 758 344
		1997.. N	X	X	5 091 239
324110T1	Other finished petroleum products, including waxes, made in a refinery .....	2002.. N	X	X	6 713 460
		1997.. N	X	X	4 941 721
324110T111	Petrolatum .....	2002.. 8 mil bbl.	X	S	152 907
		1997.. 8	X	S	86 098
324110T121	Petroleum coke .....	2002.. 11 1,000 s tons.	X	S	255 396
		1997.. 23	X	S	661 878
324110T131	Calcined petroleum coke, made in a refinery .....	2002.. 13 1,000 s tons.	X	S	379 699
		1997.. 8	X	S	264 381
324110T141	Road oil, made in a refinery .....	2002.. 2 mil bbl.	X	D	D
		1997.. 4	X	.6	13 046
324110T151	Still gas (refinery gas) .....	2002.. 6 bil cu ft.	X	S	239 672
		1997.. 5	X	S	137 467
324110T161	Special petroleum naphthas .....	2002.. 6 mil bbl.	X	D	D
		1997.. 7	X	3.3	120 197
324110T171	Aromatics (benzene, toluene, xylene, etc.), for use as a chemical raw material, made in a refinery <sup>5</sup> .....	2002.. 17	X	X	2 851 861
		1997.. 17	X	X	2 082 146
324110T181	Aromatics (benzene, toluene, xylene, etc.), for other uses, made in a refinery <sup>6</sup> .....	2002.. 4	X	X	D
		1997.. 7	X	X	254 442
324110T191	Microcrystalline petroleum waxes, made in a refinery <sup>7</sup> .....	2002.. 4 mil bbl.	X	1.2	81 741
		1997.. 7	X	q1.9	113 417
324110T1A1	Fully refined crystalline petroleum waxes, made in a refinery <sup>8</sup> .....	2002.. 6 mil bbl.	X	q1.9	118 152
		1997.. 13	X	4.2	273 867
324110T1B1	Other crystalline petroleum waxes, made in a refinery <sup>9</sup> .....	2002.. 5 mil bbl.	X	P3.4	137 741
		1997.. 10	X	S	41 082
324110T1C1	Other finished petroleum products, made in a refinery .....	2002.. 19 mil bbl.	X	S	1 762 019
		1997.. 24	X	P37.2	893 700
324110TY	Other finished petroleum products, including waxes, made in a refinery, nsk .....	2002.. N	X	X	44 884
		1997.. N	X	X	149 518
324110TYWV	Other finished petroleum products, including waxes, made in a refinery, nsk .....	2002.. N	X	X	44 884
		1997.. N	X	X	149 518
324110W	Petroleum refineries, nsk, total .....	2002.. N	X	X	236 623
		1997.. N	X	X	1 490 796
324110WY	Petroleum refineries, nsk, total .....	2002.. N	X	X	236 623
		1997.. N	X	X	1 490 796
324110WYWW	Petroleum refineries, nsk, for nonadministrative-record establishments .....	2002.. N	X	X	236 623
		1997.. N	X	X	1 490 796
324110WYWY	Petroleum refineries, nsk, for administrative-record establishments .....	2002.. N	X	X	—
		1997.. N	X	X	—

<sup>1</sup>This product code is primary to more than one industry. See industry 324191, product code 3241910111.

<sup>2</sup>This product code is primary to more than one industry. See industry 324191, product code 3241910121.

<sup>3</sup>This product code is primary to more than one industry. See industry 325110, product code 3251104111.

<sup>4</sup>This product code is primary to more than one industry. See industry 325110, product code 3251104121.

<sup>5</sup>This product code is primary to more than one industry. See industry 325110, product code 3251101111.

<sup>6</sup>This product code is primary to more than one industry. See industry 325110, product code 3251101121.

<sup>7</sup>This product code is primary to more than one industry. See industry 324199, product code 3241992211.

<sup>8</sup>This product code is primary to more than one industry. See industries 324110 and 324199, product codes 324110T1B1 and 3241992221.

<sup>9</sup>This product code is primary to more than one industry. See industries 324110 and 324199, product codes 324110T1A1 and 3241992221.

Note 1: For some establishments, data have been estimated from central unit values that are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: p-10 to 19 percent estimated; q-20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Note 2: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.



Table 6b. **Product Class Shipments for Selected States: 2002 and 1997**

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 2002. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, explanation of terms, and geographic definitions, see note at end of table. For information on geographic areas followed by \*, see Appendix D. For meaning of abbreviations and symbols, see introductory text]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)
3241101	Gasoline, including finished base stocks and blending agents	
	United States..... 2002..	97 455 097
	..... 1997..	77 557 632
	California..... 2002..	12 570 292
	..... 1997..	11 276 628
	Illinois..... 2002..	6 474 052
	..... 1997..	5 087 219
	Kansas..... 2002..	1 881 953
	..... 1997..	1 415 994
	Louisiana..... 2002..	14 678 001
	..... 1997..	11 419 313
	Montana..... 2002..	1 020 852
	..... 1997..	868 774
	New Jersey..... 2002..	3 319 350
	..... 1997..	3 211 603
	Ohio..... 2002..	3 874 923
	..... 1997..	2 661 086
	Oklahoma..... 2002..	2 636 535
	..... 1997..	2 054 699
	Texas..... 2002..	26 709 533
	..... 1997..	21 930 259
	Utah..... 2002..	1 023 982
	..... 1997..	848 063
	Washington..... 2002..	2 999 575
	..... 1997..	2 404 010
	Wyoming..... 2002..	819 557
	..... 1997..	601 374
3241104	Jet fuel	
	United States..... 2002..	17 374 167
	..... 1997..	14 017 775
	California..... 2002..	2 517 969
	..... 1997..	2 404 119
	Illinois..... 2002..	520 550
	..... 1997..	N
	Louisiana..... 2002..	2 983 163
	..... 1997..	3 282 276
	Montana..... 2002..	40 552
	..... 1997..	73 329
	New Jersey..... 2002..	618 152
	..... 1997..	296 148
	Ohio..... 2002..	458 972
	..... 1997..	N
	Oklahoma..... 2002..	319 701
	..... 1997..	296 703
	Texas..... 2002..	5 363 845
	..... 1997..	3 272 618
	Washington..... 2002..	974 380
	..... 1997..	719 259
3241107	Kerosene, excluding jet fuel	
	United States..... 2002..	749 518
	..... 1997..	960 019
	Louisiana..... 2002..	167 460
	..... 1997..	N
	Ohio..... 2002..	16 029
	..... 1997..	34 903
	Pennsylvania..... 2002..	128 400
	..... 1997..	91 586
324110A	Light fuel oils	
	United States..... 2002..	38 560 945
	..... 1997..	28 941 405
	Alabama..... 2002..	201 994
	..... 1997..	225 907
	California..... 2002..	3 204 384
	..... 1997..	2 615 561
	Illinois..... 2002..	2 038 319
	..... 1997..	1 742 451
	Kansas..... 2002..	1 051 872
	..... 1997..	839 167
	Louisiana..... 2002..	6 609 074
	..... 1997..	3 684 343
	Montana..... 2002..	544 998
	..... 1997..	433 991
	New Jersey..... 2002..	1 721 273
	..... 1997..	1 540 969
	Ohio..... 2002..	1 536 742
	..... 1997..	904 786
	Oklahoma..... 2002..	1 261 408
	..... 1997..	1 006 679
	Pennsylvania..... 2002..	2 161 191
	..... 1997..	1 611 639
	Texas..... 2002..	9 383 970
	..... 1997..	7 297 271
	Utah..... 2002..	469 516
	..... 1997..	419 221
	Washington..... 2002..	1 487 576
	..... 1997..	1 114 840
	Wyoming..... 2002..	519 451
	..... 1997..	386 782
324110D	Heavy fuel oils, including grades No. 5, 6, heavy diesel-type, heavy gas-enrichment oils, etc.	
	United States..... 2002..	6 132 764
	..... 1997..	4 295 288
	California..... 2002..	490 041
	..... 1997..	668 441
	Illinois..... 2002..	129 887
	..... 1997..	N

See footnotes at end of table.

Table 6b. **Product Class Shipments for Selected States: 2002 and 1997—Con.**

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 2002. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, explanation of terms, and geographic definitions, see note at end of table. For information on geographic areas followed by \*, see Appendix D. For meaning of abbreviations and symbols, see introductory text]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)
324110D	Heavy fuel oils, including grades No. 5, 6, heavy diesel-type, heavy gas-enrichment oils, etc.—Con.	
	United States—Con.	
	Louisiana ..... 2002 ..	1 589 116
	..... 1997 ..	744 926
	Montana ..... 2002 ..	6 706
	..... 1997 ..	N
	Texas ..... 2002 ..	1 570 375
	..... 1997 ..	967 233
	Utah ..... 2002 ..	10 303
	..... 1997 ..	37 064
	Washington ..... 2002 ..	245 573
	..... 1997 ..	353 339
324110G	Petroleum lubricating oils and greases, made in a refinery	
	United States ..... 2002 ..	1 157 968
	..... 1997 ..	704 035
	California ..... 2002 ..	45 505
	..... 1997 ..	81 862
324110J	Unfinished oils and lubricating oil base stock	
	United States ..... 2002 ..	8 465 540
	..... 1997 ..	8 219 990
	California ..... 2002 ..	1 504 616
	..... 1997 ..	2 094 865
	Illinois ..... 2002 ..	158 354
	..... 1997 ..	125 064
	Louisiana ..... 2002 ..	2 002 029
	..... 1997 ..	1 200 725
	New Jersey ..... 2002 ..	469 022
	..... 1997 ..	N
	Texas ..... 2002 ..	2 324 397
	..... 1997 ..	3 003 464
	Washington ..... 2002 ..	342 542
	..... 1997 ..	133 456
	Wyoming ..... 2002 ..	6 198
	..... 1997 ..	N
324110M	Asphalt	
	United States ..... 2002 ..	4 323 290
	..... 1997 ..	3 320 500
	California ..... 2002 ..	562 915
	..... 1997 ..	231 673
	Montana ..... 2002 ..	144 536
	..... 1997 ..	N
	New Jersey ..... 2002 ..	534 501
	..... 1997 ..	452 001
	Oklahoma ..... 2002 ..	171 718
	..... 1997 ..	104 020
	Texas ..... 2002 ..	395 219
	..... 1997 ..	385 073
	Wyoming ..... 2002 ..	114 502
	..... 1997 ..	N
324110P	Liquefied refinery gases (aliphatics), made in a refinery	
	United States ..... 2002 ..	6 689 403
	..... 1997 ..	8 157 277
	California ..... 2002 ..	387 637
	..... 1997 ..	318 248
	Illinois ..... 2002 ..	171 877
	..... 1997 ..	197 900
	Kansas ..... 2002 ..	48 189
	..... 1997 ..	N
	Louisiana ..... 2002 ..	1 431 151
	..... 1997 ..	1 447 755
	Montana ..... 2002 ..	24 826
	..... 1997 ..	25 653
	New Jersey ..... 2002 ..	252 720
	..... 1997 ..	208 578
	Ohio ..... 2002 ..	203 739
	..... 1997 ..	145 214
	Oklahoma ..... 2002 ..	90 744
	..... 1997 ..	78 267
	Texas ..... 2002 ..	2 986 532
	..... 1997 ..	4 292 934
	Utah ..... 2002 ..	13 738
	..... 1997 ..	21 801
	Washington ..... 2002 ..	214 798
	..... 1997 ..	148 704
	Wyoming ..... 2002 ..	16 739
	..... 1997 ..	16 332
324110T	Other finished petroleum products, including waxes, made in a refinery	
	United States ..... 2002 ..	6 758 344
	..... 1997 ..	5 091 239
	California ..... 2002 ..	314 618
	..... 1997 ..	268 228
	Illinois ..... 2002 ..	310 234
	..... 1997 ..	99 517
	Louisiana ..... 2002 ..	1 199 499
	..... 1997 ..	701 019
	Pennsylvania ..... 2002 ..	528 360
	..... 1997 ..	395 345
	Texas ..... 2002 ..	3 409 057
	..... 1997 ..	2 465 633

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C. For geographical definitions, see Appendix D.

**Table 7. Materials Consumed by Kind: 2002 and 1997**

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Material code	Material consumed	Quantity	Delivered cost (\$1,000)
324110	Petroleum refineries		
00900001	Total materials .....2002..	X	157 415 200
	.....1997..	X	118 682 535
21111103	Domestic crude petroleum, including lease condensate ..... mil bbl ..2002..	P2 570.7	63 157 497
	.....1997..	D	47 220 759
00999830	Foreign crude petroleum, including lease condensate ..... mil bbl ..2002..	2 950.8	69 102 574
	.....1997..	2 495.9	48 172 988
00999827	Foreign unfinished oils (received from foreign countries for further processing) ..... mil bbl ..2002..	95.1	2 297 967
	.....1997..	P127.1	2 373 376
21111205	Ethane (C <sub>2</sub> ) (80 percent purity or more) ..... mil bbl ..2002..	D	D
	.....1997..	D	D
21111207	Propane (C <sub>3</sub> ) (80 percent purity or more) ..... mil bbl ..2002..	6.7	118 257
	.....1997..	P18.0	269 928
21111203	Butane (C <sub>4</sub> ) (80 percent purity or more) ..... mil bbl ..2002..	82.7	1 925 738
	.....1997..	80.1	1 567 875
21111021	Gas mixtures (C <sub>2</sub> , C <sub>3</sub> , C <sub>4</sub> )..... mil bbl ..2002..	52.4	1 296 875
	.....1997..	48.3	952 009
21111023	Isopentane and natural gasoline ..... mil bbl ..2002..	74.6	1 843 708
	.....1997..	65.1	1 381 100
21111209	Other natural gas liquids, including plant condensate ..... mil bbl ..2002..	35.5	810 530
	.....1997..	90.3	1 427 123
32519214	Toluene and xylene (100 percent basis) ..... mil bbl ..2002..	12.5	455 442
	.....1997..	N	N
32500017	Additives (including antioxidants, antiknock compounds, and inhibitors) ..... mil bbl ..2002..	.8	159 563
	.....1997..	S	262 228
32500019	Other additives (including soaps and detergents) ..... mil bbl ..2002..	.8	40 842
	.....1997..	S	200 005
31100013	Animal and vegetable oils ..... mil lb ..2002..	2.7	709
	.....1997..	D	D
32518825	Chemical catalytic preparations .....2002..	X	D
	.....1997..	X	647 040
32518107	Sodium hydroxide (caustic soda)(100 percent NaOH) ..... 1,000 s tons ..2002..	S	129 324
	.....1997..	S	41 741
32518805	Sulfuric acid, excluding spent (100 percent H <sub>2</sub> SO <sub>4</sub> ) ..... 1, 000 s tons ..2002..	S	189 912
	.....1997..	S	56 514
33240000	Metal containers .....2002..	X	9 450
	.....1997..	X	60 531
32610029	Plastics containers.....2002..	X	D
	.....1997..	X	N
32220015	Paper and paperboard containers .....2002..	X	D
	.....1997..	X	18 404
32410007	Cost of materials received from petroleum refineries and lube manufacturers ..... mil bbl ..2002..	P279.3	8 980 758
	.....1997..	P226.8	4 981 370
00970099	All other materials and components, parts, containers, and supplies .....2002..	X	5 722 580
	.....1997..	X	4 233 383
00971000	Materials, ingredients, containers, and supplies, nsk .....2002..	X	576 175
	.....1997..	X	4 779 890

Note 1: For some establishments, data have been estimated from central unit values that are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: p-10 to 19 percent estimated; q-20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Note 2: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.